

Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1255222
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013

Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

Purchaser: _____

Designate Type of Completion:

- New Well Re-Entry Workover
- Oil WSW SWD SIOW
- Gas D&A ENHR SIGW
- OG GSW Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic Other (Core, Expl., etc.): _____

If Workover/Re-entry: Old Well Info as follows:

Operator: _____

Well Name: _____

Original Comp. Date: _____ Original Total Depth: _____

- Deepening Re-perf. Conv. to ENHR Conv. to SWD
- Plug Back Conv. to GSW Conv. to Producer
- Commingled Permit #: _____
- Dual Completion Permit #: _____
- SWD Permit #: _____
- ENHR Permit #: _____
- GSW Permit #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
-----------------------------------	-----------------	---

API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ Feet

Multiple Stage Cementing Collar Used? Yes No

If yes, show depth set: _____ Feet

If Alternate II completion, cement circulated from: _____

feet depth to: _____ w/ _____ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

Location of fluid disposal if hauled offsite:

Operator Name: _____

Lease Name: _____ License #: _____

Quarter _____ Sec. _____ Twp. _____ S. R. _____ East West

County: _____ Permit #: _____

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested
Date: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____

1255222

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
--	---

CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well? Yes No *(If No, skip questions 2 and 3)*
 Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? Yes No *(If No, skip question 3)*
 Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? Yes No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD: Size: _____ Set At: _____ Packer At: _____ Liner Run: Yes No

Date of First, Resumed Production, SWD or ENHR. _____ Producing Method:
 Flowing Pumping Gas Lift Other *(Explain)* _____

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
--	---	---

Form	ACO1 - Well Completion
Operator	SandRidge Exploration and Production LLC
Well Name	Cather Trust 3408 1-9H
Doc ID	1255222

Tops

Name	Top	Datum
Base Heebner	3485	-2100
Cottage Groce	3763	-2718
Oswego	4056	-3033
Pawnee	4321	-3084
Cherokee	4480	-3142
Verdigris	4493	-3155
Red Fork	4523	-3185
Mississippian	4628	-3286

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/15/2015
Job End Date:	4/16/2015
State:	Kansas
County:	Harper
API Number:	15-077-22137-01-00
Operator Name:	SandRidge Energy
Well Name and Number:	Cather Trust 3408 1-9H
Longitude:	-98.18658635
Latitude:	37.09347182
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	4,654
Total Base Water Volume (gal):	2,038,234
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Archer	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	95.06529	None
Sand (Proppant)	Archer	Proppant					
			Silica Substrate	NA	100.00000	4.61179	None
Hydrochloric Acid (15%)	Archer	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.03792	None
			Methyl Alcohol	67-56-1	80.00000	0.00031	None
			thiourea-formaldehyde copolymer	68527-49-1	15.00000	0.00006	None
			NONYL PHENOL, 4 MOL	104-40-5	10.00000	0.00002	None
Chemflush	Archer	Enviro-Friendly Chemical Flush					
			Hydrotreated Petroleum Distillate	64742-47-8	99.00000	0.00182	None
			Alcohol Ethoxylate Surfactants	NA	10.00000	0.00018	None
AIC	Archer	Liquid Acid Iron Control					
			Acetic Acid	64-19-7	50.00000	0.00070	None
			Citric Acid	77-92-9	30.00000	0.00042	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
		Other Chemicals					

		Water	7732-18-5		0.03183
		Aliphatic Hydrocarbon	64742-47-8		0.01592
		Anionic Polymer	N/A		0.01592
		Water	7732-18-5		0.01186
		Oxyalkylated Alcohol	68002-97-1		0.00265
		Polyol Ester	N/A		0.00265
		Acrylic Polymer	28205-96-1		0.00198
		Sodium Salt of Phosphate Ester	68131-72-6		0.00198
		Polyglycol Ester	N/A		0.00053
		Water	7732-18-5		0.00049
		WATER	7732-18-5		0.00014
		TRADE SECRET	N/A		0.00009
		Alcohol Ethoxylate Surfactants	N/A		0.00006
		Tetrasodium Ethylenediaminetetraacetate	64-02-8		0.00005
		n-olefins	N/A		0.00003
		Propargyl Alcohol	107-19-7		0.00002
		METHANOL	67-56-1		0.00002
		ISOPROPANOL	67-63-0		0.00002
		Water	7732-18-5		
		Cinnamic Aldehyde	104-55-2		
		Acetic Acid	64-19-7		
		Surfactant	N/A		
		Buffer	N/A		

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Cather Trust 3408 1-9H Perforations And Shots Per Foot

Stage Nbr	Date	Type	Top Depth	Top Depth (TVD)	Bottom Depth	Bottom Depth (TVD)	Zone	Shot Density	Current Status	String Perforated
20	4/16/2015	Frac Sleeve	5,279	4,659	5,281	4,659	Miss Lime - Upper	1	Active	Production Liner
19	4/16/2015	Frac Sleeve	5,559	4,652	5,561	4,652	Miss Lime - Upper	1	Active	Production Liner
18	4/16/2015	Frac Sleeve	5,800	4,648	5,802	4,648	Miss Lime - Upper	1	Active	Production Liner
17	4/16/2015	Frac Sleeve	6,038	4,649	6,040	4,649	Miss Lime - Upper	1	Active	Production Liner
16	4/16/2015	Frac Sleeve	6,279	4,649	6,281	4,649	Miss Lime - Upper	1	Active	Production Liner
15	4/16/2015	Frac Sleeve	6,509	4,644	6,511	4,644	Miss Lime - Upper	1	Active	Production Liner
14	4/16/2015	Frac Sleeve	6,702	4,644	6,704	4,644	Miss Lime - Upper	1	Active	Production Liner
13	4/16/2015	Frac Sleeve	6,943	4,642	6,945	4,642	Miss Lime - Upper	1	Active	Production Liner
12	4/16/2015	Frac Sleeve	7,180	4,646	7,182	4,646	Miss Lime - Upper	1	Active	Production Liner
11	4/16/2015	Frac Sleeve	7,421	4,643	7,423	4,643	Miss Lime - Upper	1	Active	Production Liner
10	4/16/2015	Frac Sleeve	7,645	4,645	7,647	4,645	Miss Lime - Upper	1	Active	Production Liner
9	4/16/2015	Frac Sleeve	7,876	4,647	7,878	4,647	Miss Lime - Upper	1	Active	Production Liner
8	4/16/2015	Frac Sleeve	8,098	4,644	8,100	4,644	Miss Lime - Upper	1	Active	Production Liner
7	4/16/2015	Frac Sleeve	8,328	4,634	8,330	4,634	Miss Lime - Upper	1	Active	Production Liner
6	4/16/2015	Frac Sleeve	8,559	4,635	8,561	4,635	Miss Lime - Upper	1	Active	Production Liner
5	4/16/2015	Frac Sleeve	8,769	4,646	8,771	4,646	Miss Lime - Upper	1	Active	Production Liner
4	4/16/2015	Frac Sleeve	8,983	4,646	8,985	4,645	Miss Lime - Upper	1	Active	Production Liner
3	4/15/2015	Frac Sleeve	9,203	4,643	9,205	4,643	Miss Lime - Upper	1	Active	Production Liner
2	4/15/2015	Frac Sleeve	9,410	4,643	9,412	4,643	Miss Lime - Upper	1	Active	Production Liner
1	4/15/2015	Frac Sleeve	9,630	4,639	9,632	4,638	Miss Lime - Upper	1	Active	Production Liner



INVOICE

DATE	INVOICE #
3/13/2015	5556

BILL TO
SANDRIDGE ENERGY, INC. ATTN: PURCHASING MANAGER 123 ROBERT S. KERR AVENUE OKLAHOMA CITY, OK 73102

REMIT TO
EDGE SERVICES, INC. PO BOX 609 WOODWARD, OK 73802

COUNTY	Start Date	End Date	Work Order	Rig Number	LEASE NAME	Terms
HARPER, KS	3/12/2015		4133	LARIAT 20	CATHER 3408 1-9H	Due on rec...

Description
DRILLED 100' OF 30" CONDUCTOR HOLE DRILLED 6' OF 76" HOLE FURNISHED AND SET 6' X 6' TINHORN CELLAR FURNISHED 100' OF 20" CONDUCTOR PIPE FURNISHED MUD, WATER, AND TRUCKING FURNISHED WELDER AND MATERIALS FURNISHED 10 YARDS OF 10 SACK GROUT FOR CONDUCTOR HOLE FURNISHED 4 YARDS OF 10 SACK GROUT FOR MOUSE HOLE FURNISHED GROUT PUMP DRILL MOUSE HOLE FURNISHED 80' OF 16" CONDUCTOR PIPE TOTAL BID \$15,700.00

Sales Tax (6.15%)	\$275.64
--------------------------	----------

TOTAL	\$15,975.64
--------------	-------------



SandRidge Energy
 Cather Trust 3408 1-9H
 Harper County, KS

1.0 Executive Summary

Allied Oil & Gas Services would like to thank you, for the award of the provision of cementing products and services on the well Cather Trust 3408 1-9H Surface Casing.

A pre-job meeting was held to discuss job details, review the safety hazards, potential environmental impact and established emergency procedures.

Allied started the job testing lines to 3500 psi. After a successful test we began the job by pumping 10 bbls of preflush spacer. We then mixed and pumped the following cements:

74.13 bbl	225 Sacks of 13.2 ppg
Class A Slurry -	1.85 Yield
2% Calcium Chloride	
2% Gypsum	
2% NAMS	
.25 lb/sk Flocele	

32.06	bbl	150	Sacks of 15.6 ppg
Class A Slurry -		1.2	Yield
2% Calcium Chloride			
.25 lb/sk Flocele			

The top plug was then released and displaced with 59 Bbls of fresh water. The plug bumped and pressured up to 980 psi. Pressure was released and floats held with .25 bbl back. 35 Bbl circulated to the pit.

All real time data is shown on the graph in the attachment section.

Allied Oil & Gas Services remains committed to provide operational excellence and superior product performance. All comments and suggestions are greatly appreciated and help us to continue to provide this level of service.

Again we want to thank you for the opportunity to perform these and your future cementing & acidizing service needs.



SandRidge Energy
Cather Trust 3408 1-9H
Harper County, KS.

1.0 Executive Summary

Allied Oil & Gas Services would like to thank you for the award of the provision of cementing products and services on the well **Cather Trust 3408 1-9H intermediate casing**.

A pre-job meeting was held to discuss job details, review the safety hazards, potential environmental impact and established emergency procedures.

Allied started the job testing lines to 3500 psi. After a successful test we began the job by pumping 30 bbls of spacer. We then mixed and pumped the following cements:

59.84 Bbls (**240 sacks**) of 13.6 ppg **Lead slurry**:

50:50 Class A:Poz Blend – 1.4 Yield

2.0% Gel

0.4% FL-160

0.1% SA-51

21.02 Bbls (**100 sacks**) of 15.6 ppg **Tail slurry**:

Class A - 1.18 Yield

0.8% FL-160

0.2% CD-31

The top plug was then released and displaced with 197 Bbls of fresh water. The plug bumped and pressured up to 1500 psi. Pressure was released and floats held with 1 bbl back to the truck. Well maintained circulation throughout the job.

All real time data can be review in the chart section of the report.

Allied Oil & Gas Services remains committed to provide operational excellence and superior product performance. All comments and suggestions are greatly appreciated and help us to continue to provide this level of service.

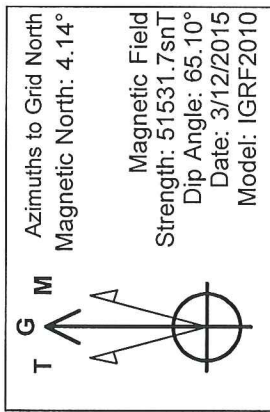
Again we want to thank you for the opportunity to perform these and your future cementing & acidizing service needs.

SECTION DETAILS

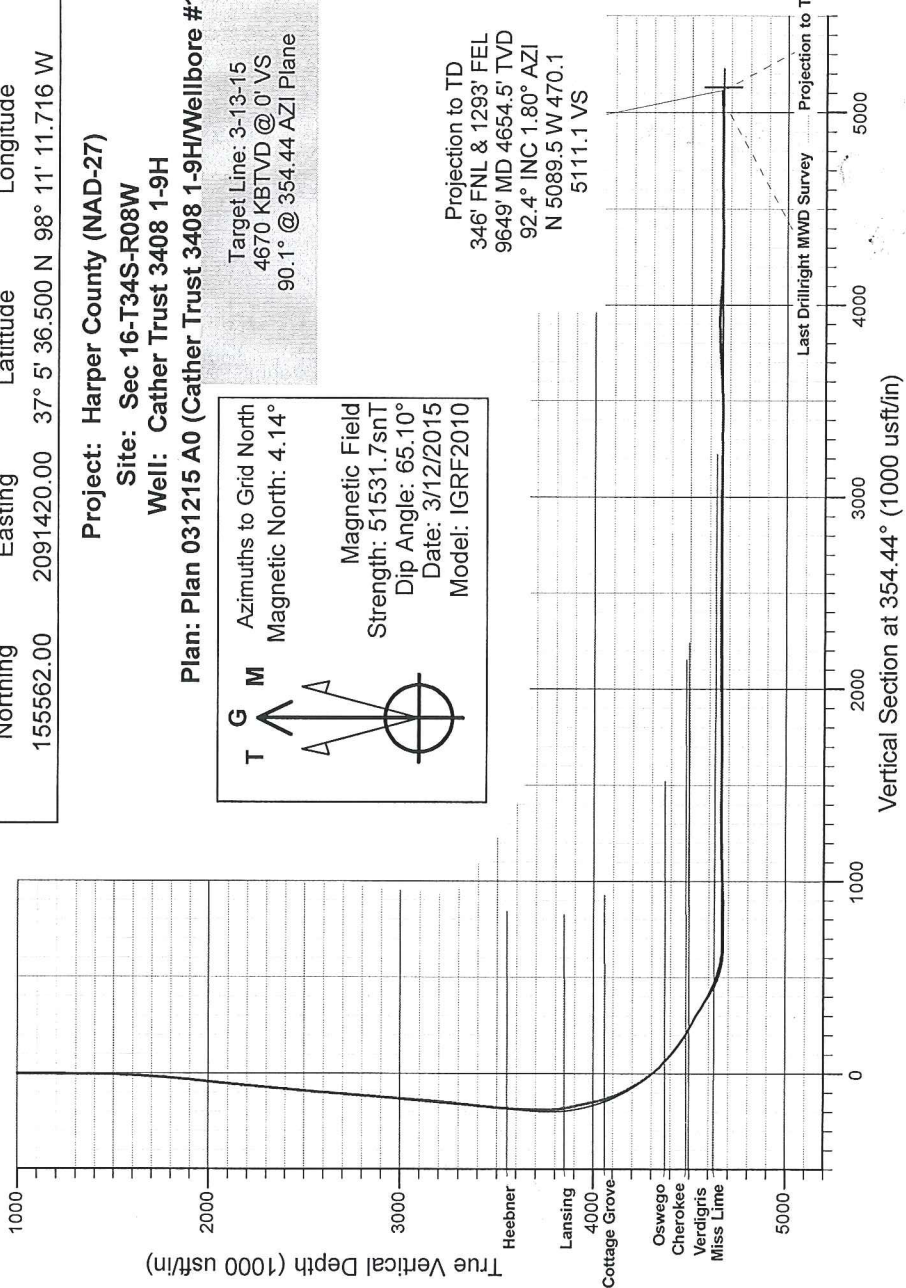
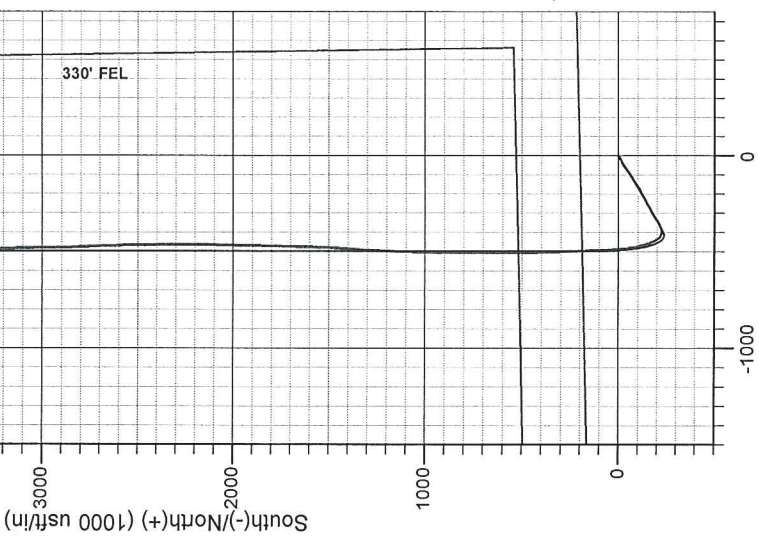
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1250.0	0.00	0.00	1250.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
1859.5	12.19	239.64	1854.9	-32.6	-55.7	2.00	239.64	-27.1	Start Turn 0.00
3744.0	12.19	239.60	3696.9	-233.9	-399.0	0.00	-90.02	-194.1	Start DLS 7.00 TFO 125.56
4696.3	60.00	0.00	4492.2	174.8	-497.0	7.00	125.56	222.1	Start 200.0 hold at 4696.3 MD
4896.3	60.00	0.00	4592.2	348.0	-497.0	0.00	0.00	394.5	Start DLS 10.00 TFO 0.00
5197.3	90.10	0.00	4669.0	635.4	-497.0	10.00	-0.01	680.6	Start DLS 0.00 TFO 17.63
9666.9	90.10	360.00	4661.0	5105.0	-497.0	0.00	0.00	5129.1	TD at 9666.9

WELL DETAILS: Cather Trust 3408 1-9H		
Ground Level:	Latitude	Longitude
1320.0	37° 5' 36.500 N	98° 11' 11.716 W

Project: Harper County (NAD-27)
Site: Sec 16-T34S-R08W
Well: Cather Trust 3408 1-9H
Plan: Plan 031215 A0 (Cather Trust 3408 1-9HWellbore #1)



Target Line: 3-13-15
 4670 KBTVD @ 0' VS
 90.1° @ 354.44 AZI Plane



DrillRight

Survey Report

Company: Sandridge Energy	Local Co-ordinate Reference: Well Cather Trust 3408 1-9H
Project: Harper County (NAD-27)	TVD Reference: KB @ 1338.0usft
Site: Sec 16-T34S-R08W	MD Reference: KB @ 1338.0usft
Well: Cather Trust 3408 1-9H	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: EDM 5000.1 Single User Db

Project Harper County (NAD-27)			
Map System: US State Plane 1927 (Exact solution)	System Datum: Mean Sea Level		
Geo Datum: NAD 1927 (NADCON CONUS)			
Map Zone: Kansas South 1502			

Site Sec 16-T34S-R08W			
Site Position:	Northing: 150,433.00 usft	Latitude: 37° 4' 45.929 N	
From: Map	Easting: 2,087,114.00 usft	Longitude: 98° 12' 5.062 W	
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.18 °	

Well Cather Trust 3408 1-9H			
Well Position	+N-S 0.0 usft	Northing: 155,562.00 usft	Latitude: 37° 5' 36.500 N
	+E-W 0.0 usft	Easting: 2,091,420.00 usft	Longitude: 98° 11' 11.716 W
Position Uncertainty	0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 1,320.0 usft

Wellbore Wellbore #1					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2015	4.33	65.10	51,532

Design Wellbore #1					
Audit Notes:					
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0			
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	354.44	

Survey Program Date 3/30/2015				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
50.0	778.0	Gyro Surveys (Wellbore #1)	GYD_DP_MS	Gyrodatta gyro-compassing and drop
825.0	9,649.0	Drillright MWD Surveys (Wellbore #1)	MWD	MWD - Standard

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
50.0	0.04	188.62	50.0	0.0	0.0	0.0	0.08	0.08	0.00	
First Gyro Survey										
100.0	0.10	104.62	100.0	0.0	0.0	0.0	0.21	0.12	-168.00	
150.0	0.21	52.35	150.0	0.0	0.2	0.0	0.34	0.22	-104.54	
200.0	0.07	55.91	200.0	0.1	0.2	0.0	0.28	-0.28	7.12	
250.0	0.17	91.21	250.0	0.1	0.3	0.1	0.24	0.20	70.60	
300.0	0.08	84.16	300.0	0.1	0.5	0.0	0.18	-0.18	-14.10	
350.0	0.17	98.66	350.0	0.1	0.6	0.0	0.19	0.18	29.00	
400.0	0.18	91.05	400.0	0.1	0.7	0.0	0.05	0.02	-15.22	

DrillRight

Survey Report

Company:	Sandridge Energy	Local Co-ordinate Reference:	Well Cather Trust 3408 1-9H
Project:	Harper County (NAD-27)	TVD Reference:	KB @ 1338.0usft
Site:	Sec 16-T34S-R08W	MD Reference:	KB @ 1338.0usft
Well:	Cather Trust 3408 1-9H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
450.0	0.13	113.22	450.0	0.0	0.8	0.0	0.15	-0.10	44.34	
500.0	0.07	54.48	500.0	0.0	0.9	0.0	0.22	-0.12	-117.48	
550.0	0.15	77.79	550.0	0.1	1.0	0.0	0.18	0.16	46.62	
600.0	0.03	156.18	600.0	0.1	1.1	0.0	0.29	-0.24	156.78	
650.0	0.05	311.72	650.0	0.1	1.1	0.0	0.16	0.04	311.08	
700.0	0.14	203.69	700.0	0.0	1.0	-0.1	0.33	0.18	-216.06	
750.0	0.25	182.06	750.0	-0.1	1.0	-0.2	0.26	0.22	-43.26	
778.0	0.41	172.28	778.0	-0.3	1.0	-0.4	0.60	0.57	-34.93	
Last Gyro Survey										
825.0	0.30	238.90	825.0	-0.5	0.9	-0.6	0.85	-0.23	141.74	
First Drillright MWD Survey										
1,108.0	0.20	228.40	1,108.0	-1.2	-0.1	-1.2	0.04	-0.04	-3.71	
1,297.0	1.80	217.30	1,297.0	-3.8	-2.1	-3.6	0.85	0.85	-5.87	
1,392.0	1.60	288.90	1,391.9	-4.6	-4.3	-4.1	2.10	-0.21	75.37	
1,486.0	3.60	252.70	1,485.8	-5.0	-8.3	-4.2	2.65	2.13	-38.51	
1,580.0	7.50	248.10	1,579.4	-8.2	-16.8	-6.5	4.17	4.15	-4.89	
1,674.0	8.40	240.30	1,672.5	-13.9	-28.5	-11.1	1.49	0.96	-8.30	
1,769.0	10.80	239.10	1,766.1	-21.9	-42.2	-17.7	2.53	2.53	-1.26	
1,864.0	12.00	236.50	1,859.3	-31.9	-58.0	-26.1	1.37	1.26	-2.74	
1,959.0	12.80	236.40	1,952.0	-43.2	-75.0	-35.7	0.84	0.84	-0.11	
2,053.0	10.40	231.80	2,044.1	-54.2	-90.4	-45.2	2.73	-2.55	-4.89	
2,148.0	12.00	236.40	2,137.3	-65.0	-105.4	-54.4	1.93	1.68	4.84	
2,243.0	12.30	241.40	2,230.2	-75.3	-122.5	-63.1	1.15	0.32	5.26	
2,337.0	13.00	238.60	2,321.9	-85.6	-140.3	-71.6	0.99	0.74	-2.98	
2,432.0	11.50	236.10	2,414.7	-96.4	-157.3	-80.7	1.67	-1.58	-2.63	
2,527.0	11.30	240.30	2,507.9	-106.3	-173.2	-89.0	0.90	-0.21	4.42	
2,621.0	10.70	237.80	2,600.1	-115.5	-188.6	-96.7	0.82	-0.64	-2.66	
2,715.0	12.40	243.10	2,692.2	-124.7	-205.0	-104.3	2.13	1.81	5.64	
2,809.0	12.00	243.20	2,784.1	-133.7	-222.7	-111.5	0.43	-0.43	0.11	
2,904.0	11.90	242.90	2,877.0	-142.6	-240.2	-118.7	0.12	-0.11	-0.32	
2,999.0	10.20	243.80	2,970.3	-150.8	-256.5	-125.2	1.80	-1.79	0.95	
3,093.0	11.30	242.30	3,062.6	-158.8	-272.1	-131.7	1.21	1.17	-1.60	
3,188.0	11.80	238.50	3,155.7	-168.2	-288.6	-139.4	0.96	0.53	-4.00	
3,283.0	13.90	237.30	3,248.3	-179.4	-306.5	-148.9	2.23	2.21	-1.26	
3,377.0	12.30	235.10	3,339.9	-191.2	-324.3	-158.9	1.78	-1.70	-2.34	
3,472.0	12.00	233.00	3,432.8	-203.0	-340.4	-169.0	0.56	-0.32	-2.21	
3,567.0	13.20	246.60	3,525.5	-213.2	-358.3	-177.5	3.36	1.26	14.32	
3,661.0	10.40	245.60	3,617.5	-221.0	-375.9	-183.5	2.99	-2.98	-1.06	
3,724.0	9.50	250.60	3,679.5	-225.1	-385.9	-186.6	1.98	-1.43	7.94	
3,756.0	10.20	260.20	3,711.1	-226.4	-391.2	-187.5	5.57	2.19	30.00	
3,787.0	10.40	271.30	3,741.6	-226.8	-396.7	-187.3	6.42	0.65	35.81	
3,819.0	11.20	281.30	3,773.0	-226.2	-402.7	-186.1	6.36	2.50	31.25	
3,850.0	12.50	291.10	3,803.3	-224.4	-408.8	-183.7	7.71	4.19	31.61	

DrillRight

Survey Report

Company:	Sandridge Energy	Local Co-ordinate Reference:	Well Cather Trust 3408 1-9H
Project:	Harper County (NAD-27)	TVD Reference:	KB @ 1338.0usft
Site:	Sec 16-T34S-R08W	MD Reference:	KB @ 1338.0usft
Well:	Cather Trust 3408 1-9H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,882.0	14.10	298.90	3,834.5	-221.2	-415.4	-179.9	7.50	5.00	24.38	
3,913.0	14.90	306.70	3,864.5	-217.0	-421.9	-175.1	6.80	2.58	25.16	
3,945.0	14.20	314.80	3,895.5	-211.8	-428.0	-169.3	6.72	-2.19	25.31	
3,976.0	13.80	324.80	3,925.6	-206.1	-432.8	-163.2	7.90	-1.29	32.26	
4,008.0	13.50	333.10	3,956.7	-199.6	-436.7	-156.4	6.19	-0.94	25.94	
4,039.0	13.20	336.00	3,986.8	-193.2	-439.8	-149.7	2.37	-0.97	9.35	
4,071.0	14.30	334.70	4,017.9	-186.3	-443.0	-142.5	3.57	3.44	-4.06	
4,102.0	16.20	336.40	4,047.8	-178.9	-446.3	-134.8	6.30	6.13	5.48	
4,133.0	18.70	338.50	4,077.4	-170.3	-449.9	-125.9	8.32	8.06	6.77	
4,165.0	22.10	340.50	4,107.4	-159.8	-453.8	-115.1	10.84	10.63	6.25	
4,196.0	25.30	342.30	4,135.8	-148.0	-457.7	-103.0	10.58	10.32	5.81	
4,228.0	27.80	343.70	4,164.4	-134.3	-461.9	-88.9	8.05	7.81	4.38	
4,259.0	29.90	344.90	4,191.5	-119.9	-465.9	-74.2	7.03	6.77	3.87	
4,291.0	30.90	347.40	4,219.1	-104.2	-469.8	-58.2	5.04	3.13	7.81	
4,322.0	33.20	349.70	4,245.4	-88.1	-473.1	-41.8	8.40	7.42	7.42	
4,354.0	35.70	351.10	4,271.8	-70.2	-476.1	-23.8	8.19	7.81	4.38	
4,385.0	37.70	352.50	4,296.7	-51.9	-478.7	-5.3	6.99	6.45	4.52	
4,417.0	39.80	353.80	4,321.6	-32.0	-481.1	14.8	7.04	6.56	4.06	
4,448.0	42.40	354.60	4,345.0	-11.7	-483.2	35.1	8.56	8.39	2.58	
4,480.0	45.60	355.20	4,368.0	10.4	-485.1	57.4	10.08	10.00	1.88	
4,512.0	49.00	355.50	4,389.7	33.8	-487.0	80.9	10.65	10.63	0.94	
4,543.0	51.50	355.90	4,409.5	57.6	-488.8	104.7	8.13	8.06	1.29	
4,574.0	52.20	356.60	4,428.7	81.9	-490.4	129.1	2.87	2.26	2.26	
4,606.0	53.60	357.40	4,448.0	107.4	-491.7	154.6	4.81	4.38	2.50	
4,638.0	55.90	358.10	4,466.4	133.5	-492.8	180.6	7.41	7.19	2.19	
4,701.0	60.50	358.50	4,499.6	187.0	-494.4	234.0	7.32	7.30	0.63	
4,796.0	58.70	358.30	4,547.7	268.9	-496.6	315.8	1.90	-1.89	-0.21	
4,859.0	57.70	357.40	4,580.9	322.4	-498.6	369.2	2.00	-1.59	-1.43	
4,890.0	57.80	357.70	4,597.4	348.6	-499.8	395.4	0.88	0.32	0.97	
4,922.0	60.60	358.30	4,613.8	376.1	-500.7	422.8	8.90	8.75	1.88	
4,953.0	64.30	358.40	4,628.1	403.6	-501.5	450.3	11.94	11.94	0.32	
4,985.0	68.20	358.60	4,641.0	432.8	-502.3	479.5	12.20	12.19	0.63	
5,016.0	72.10	358.90	4,651.6	462.0	-502.9	508.5	12.61	12.58	0.97	
5,047.0	76.20	358.80	4,660.0	491.8	-503.5	538.3	13.23	13.23	-0.32	
5,079.0	79.40	0.00	4,666.8	523.1	-503.8	569.4	10.65	10.00	3.75	
5,110.0	83.00	0.00	4,671.5	553.7	-503.8	599.9	11.61	11.61	0.00	
5,142.0	86.90	359.00	4,674.3	585.6	-504.1	631.7	12.58	12.19	-3.13	
5,173.0	89.50	359.90	4,675.3	616.5	-504.4	662.5	8.87	8.39	2.90	
5,202.0	89.70	359.90	4,675.5	645.5	-504.5	691.4	0.69	0.69	0.00	
5,296.0	90.50	359.90	4,675.3	739.5	-504.6	785.0	0.85	0.85	0.00	
5,391.0	91.10	0.60	4,674.0	834.5	-504.2	879.5	0.97	0.63	0.74	
5,485.0	92.20	359.90	4,671.3	928.5	-503.8	972.9	1.39	1.17	-0.74	
5,580.0	91.40	1.60	4,668.3	1,023.4	-502.6	1,067.3	1.98	-0.84	1.79	
5,674.0	91.10	3.20	4,666.3	1,117.3	-498.6	1,160.4	1.73	-0.32	1.70	

DrillRight

Survey Report

Company:	Sandridge Energy	Local Co-ordinate Reference:	Well Cather Trust 3408 1-9H
Project:	Harper County (NAD-27)	TVD Reference:	KB @ 1338.0usft
Site:	Sec 16-T34S-R08W	MD Reference:	KB @ 1338.0usft
Well:	Cather Trust 3408 1-9H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,769.0	90.80	3.30	4,664.7	1,212.2	-493.2	1,254.2	0.33	-0.32	0.11	
5,863.0	90.20	3.90	4,663.9	1,306.0	-487.3	1,347.0	0.90	-0.64	0.64	
5,958.0	88.90	2.80	4,664.6	1,400.8	-481.8	1,440.9	1.79	-1.37	-1.16	
6,050.0	89.40	2.60	4,666.0	1,492.7	-477.5	1,531.9	0.59	0.54	-0.22	
6,140.0	89.70	2.30	4,666.7	1,582.6	-473.6	1,621.0	0.47	0.33	-0.33	
6,232.0	90.40	0.90	4,666.6	1,674.6	-471.0	1,712.3	1.70	0.76	-1.52	
6,323.0	91.70	1.60	4,665.0	1,765.5	-469.1	1,802.7	1.62	1.43	0.77	
6,413.0	91.50	0.70	4,662.4	1,855.5	-467.2	1,892.0	1.02	-0.22	-1.00	
6,504.0	90.50	0.70	4,660.9	1,946.4	-466.1	1,982.5	1.10	-1.10	0.00	
6,596.0	89.50	0.60	4,660.9	2,038.4	-465.1	2,073.9	1.09	-1.09	-0.11	
6,687.0	90.80	1.20	4,660.6	2,129.4	-463.7	2,164.3	1.57	1.43	0.66	
6,779.0	91.10	1.10	4,659.1	2,221.4	-461.8	2,255.7	0.34	0.33	-0.11	
6,869.0	89.80	359.60	4,658.4	2,311.4	-461.3	2,345.2	2.21	-1.44	-1.67	
6,960.0	89.50	358.80	4,658.9	2,402.4	-462.5	2,435.9	0.94	-0.33	-0.88	
7,050.0	88.30	359.10	4,660.7	2,492.3	-464.2	2,525.6	1.37	-1.33	0.33	
7,140.0	89.30	358.70	4,662.6	2,582.3	-465.9	2,615.3	1.20	1.11	-0.44	
7,230.0	92.30	357.80	4,661.3	2,672.2	-468.7	2,705.1	3.48	3.33	-1.00	
7,322.0	90.10	358.50	4,659.4	2,764.2	-471.6	2,796.9	2.51	-2.39	0.76	
7,416.0	89.60	357.60	4,659.6	2,858.1	-474.8	2,890.7	1.10	-0.53	-0.96	
7,510.0	89.80	358.30	4,660.1	2,952.0	-478.2	2,984.5	0.77	0.21	0.74	
7,603.0	89.00	359.70	4,661.1	3,045.0	-479.8	3,077.2	1.73	-0.86	1.51	
7,697.0	89.10	359.70	4,662.6	3,139.0	-480.3	3,170.8	0.11	0.11	0.00	
7,792.0	90.40	358.80	4,663.1	3,234.0	-481.6	3,265.4	1.66	1.37	-0.95	
7,886.0	89.20	359.70	4,663.4	3,328.0	-482.8	3,359.1	1.60	-1.28	0.96	
7,981.0	90.50	359.50	4,663.6	3,423.0	-483.4	3,453.7	1.38	1.37	-0.21	
8,076.0	92.10	0.30	4,661.5	3,518.0	-483.6	3,548.3	1.88	1.68	0.84	
8,171.0	92.80	359.10	4,657.4	3,612.9	-484.1	3,642.8	1.46	0.74	-1.26	
8,265.0	92.00	359.20	4,653.5	3,706.8	-485.5	3,736.4	0.86	-0.85	0.11	
8,360.0	94.10	359.10	4,648.4	3,801.6	-486.9	3,830.9	2.21	2.21	-0.11	
8,454.0	88.80	359.30	4,646.0	3,895.5	-488.2	3,924.5	5.64	-5.64	0.21	
8,549.0	85.30	358.50	4,650.9	3,990.4	-490.0	4,019.1	3.78	-3.68	-0.84	
8,643.0	86.60	359.50	4,657.6	4,084.1	-491.7	4,112.6	1.74	1.38	1.06	
8,738.0	88.20	0.40	4,661.9	4,179.0	-491.8	4,207.0	1.93	1.68	0.95	
8,832.0	89.40	0.40	4,663.9	4,273.0	-491.1	4,300.5	1.28	1.28	0.00	
8,926.0	91.20	2.60	4,663.4	4,367.0	-488.6	4,393.8	3.02	1.91	2.34	
9,021.0	91.00	3.20	4,661.5	4,461.8	-483.8	4,487.7	0.67	-0.21	0.63	
9,116.0	90.50	1.40	4,660.3	4,556.7	-480.0	4,581.8	1.97	-0.53	-1.89	
9,210.0	89.60	1.50	4,660.2	4,650.7	-477.6	4,675.1	0.96	-0.96	0.11	
9,304.0	91.10	1.90	4,659.6	4,744.7	-474.9	4,768.3	1.65	1.60	0.43	
9,399.0	89.50	0.10	4,659.1	4,839.6	-473.2	4,862.7	2.54	-1.68	-1.89	
9,493.0	90.40	359.90	4,659.2	4,933.6	-473.2	4,956.3	0.98	0.96	-0.21	
9,599.0	92.40	1.80	4,656.6	5,039.6	-471.6	5,061.6	2.60	1.89	1.79	

Last Drillright MWD Survey

DrillRight

Survey Report

Company: Sandridge Energy	Local Co-ordinate Reference: Well Cather Trust 3408 1-9H
Project: Harper County (NAD-27)	TVD Reference: KB @ 1338.0usft
Site: Sec 16-T34S-R08W	MD Reference: KB @ 1338.0usft
Well: Cather Trust 3408 1-9H	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,649.0	92.40	1.80	4,654.5	5,089.5	-470.1	5,111.1	0.00	0.00	0.00
Projection to TD - PBHL Cather Trust 1-9H									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
50.0	50.0	0.0	0.0	First Gyro Survey
778.0	778.0	-0.3	1.0	Last Gyro Survey
825.0	825.0	-0.5	0.9	First Drillright MWD Survey
9,599.0	4,656.6	5,039.6	-471.6	Last Drillright MWD Survey
9,649.0	4,654.5	5,089.5	-470.1	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1250.0	0.00	0.00	1250.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
1859.5	12.19	239.64	1854.9	-32.6	-55.7	2.00	239.64	-27.1	Start Turn 0.00
3744.0	12.19	239.60	3696.9	-233.9	-399.0	0.00	-90.02	-194.1	Start DLS 7.00 TFO 125.56
4696.3	60.00	0.00	4492.2	174.8	-497.0	7.00	125.56	222.1	Start 200.0 hold at 4696.3 MD
4896.3	60.00	0.00	4592.2	348.0	-497.0	0.00	0.00	394.5	Start DLS 10.00 TFO 0.00
5197.3	90.10	0.00	4669.0	635.4	-497.0	10.00	-0.01	680.6	Start DLS 0.00 TFO 17.63
9666.9	90.10	360.00	4661.0	5105.0	-497.0	0.00	0.00	5129.1	TD at 9666.9

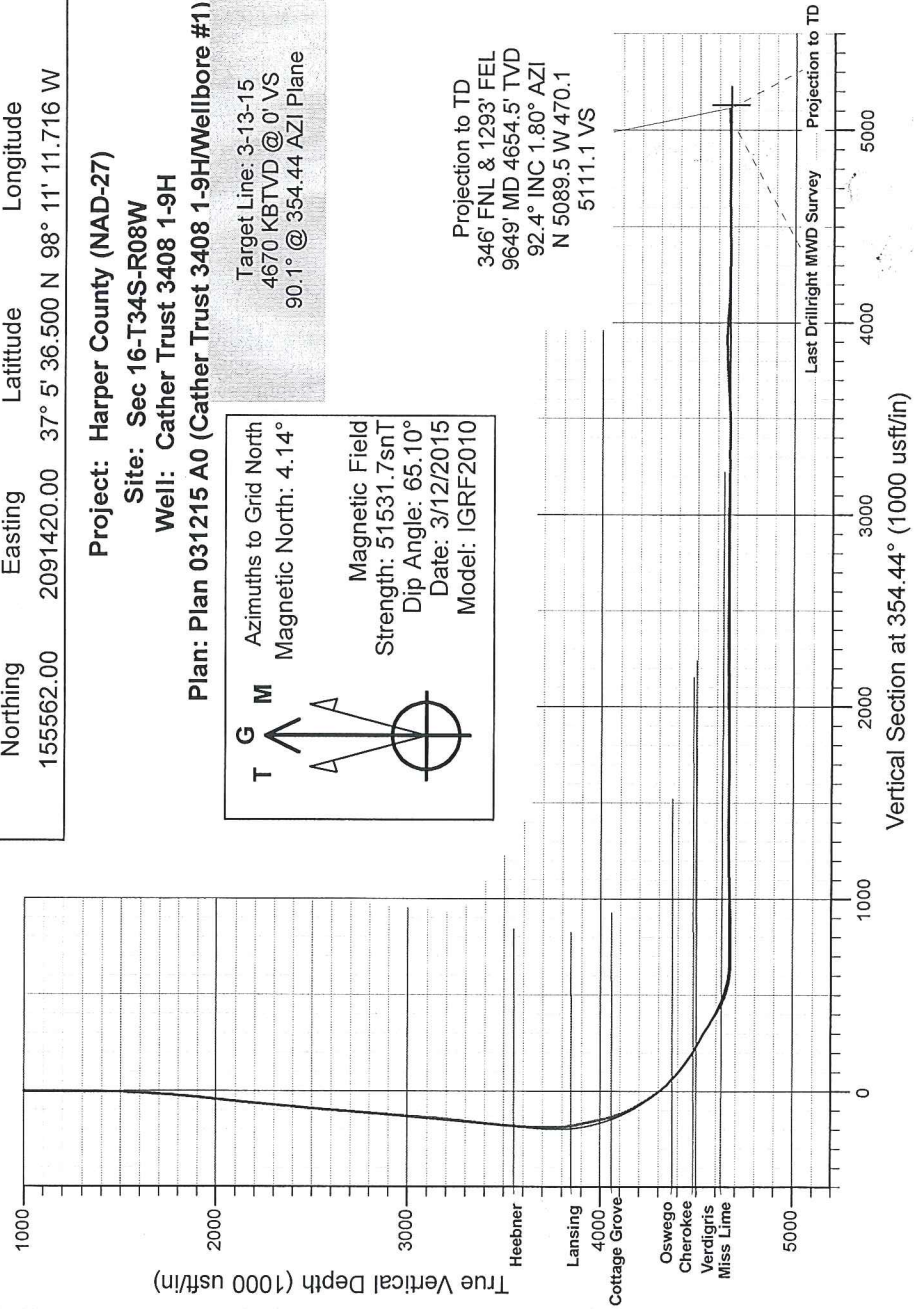
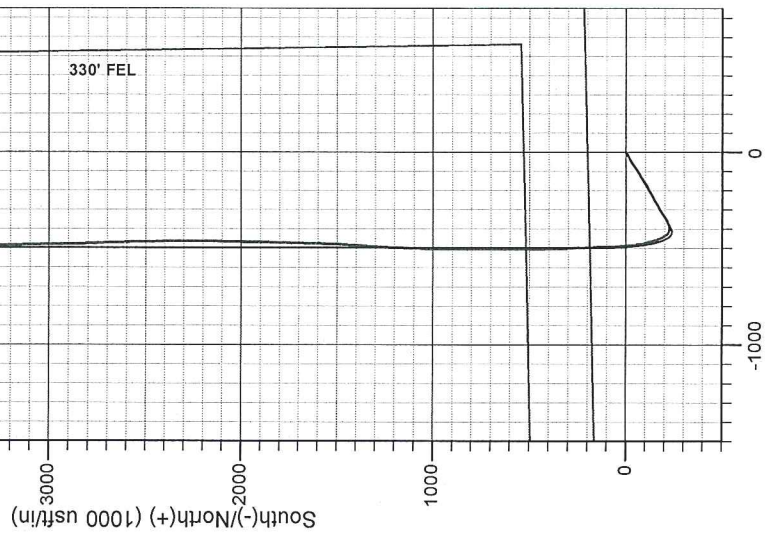
WELL DETAILS: Cather Trust 3408 1-9H			
Ground Level:	Easting	Latitude	Longitude
1320.0	2091420.00	37° 5' 36.500 N	98° 11' 11.716 W

Project: Harper County (NAD-27)
Site: Sec 16-T34S-R08W
Well: Cather Trust 3408 1-9H
Plan: Plan 031215 A0 (Cather Trust 3408 1-9HWellbore #1)

T G M
 Azimuths to Grid North
 Magnetic North: 4.14°
 Magnetic Field
 Strength: 51531.7snT
 Dip Angle: 65.10°
 Date: 3/12/2015
 Model: IGRF2010

Target Line: 3-13-15
 4670 KBTVD @ 0' VS
 90.1° @ 354.44 AZI Plane

Projection to TD
 346' FNL & 1293' FEL
 9649' MD 4654.5' TVD
 92.4° INC 1.80° AZI
 N 5089.5 W 470.1
 5111.1 VS



Projection to TD
 346' FNL & 1293' FEL
 9649' MD 4654.5' TVD
 92.4° INC 1.80° AZI
 N 5089.5 W 470.1
 5111.1 VS

DrillRight

Survey Report

Company: Sandridge Energy	Local Co-ordinate Reference: Well Cather Trust 3408 1-9H
Project: Harper County (NAD-27)	TVD Reference: KB @ 1338.0usft
Site: Sec 16-T34S-R08W	MD Reference: KB @ 1338.0usft
Well: Cather Trust 3408 1-9H	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: EDM 5000.1 Single User Db

Project: Harper County (NAD-27)	System Datum: Mean Sea Level
Map System: US State Plane 1927 (Exact solution)	
Geo Datum: NAD 1927 (NADCON CONUS)	
Map Zone: Kansas South 1502	

Site: Sec 16-T34S-R08W			
Site Position:	Northing: 150,433.00 usft	Latitude: 37° 4' 45.929 N	
From: Map	Easting: 2,087,114.00 usft	Longitude: 98° 12' 5.062 W	
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.18 °	

Well: Cather Trust 3408 1-9H			
Well Position	+N-S 0.0 usft	Northing: 155,562.00 usft	Latitude: 37° 5' 36.500 N
	+E-W 0.0 usft	Easting: 2,091,420.00 usft	Longitude: 98° 11' 11.716 W
Position Uncertainty	0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 1,320.0 usft

Wellbore: Wellbore #1					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2015	4.33	65.10	51,532

Design: Wellbore #1					
Audit Notes:					
Version: 1.0	Phase: ACTUAL		Tie On Depth:		0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0		354.44

Survey Program Date 3/30/2015					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
50.0	778.0	Gyro Surveys (Wellbore #1)	GYD_DP_MS	Gyrodatta gyro-compassing and drop	
825.0	9,649.0	Drillright MWD Surveys (Wellbore #1)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
50.0	0.04	188.62	50.0	0.0	0.0	0.0	0.08	0.08	0.00	
First Gyro Survey										
100.0	0.10	104.62	100.0	0.0	0.0	0.0	0.21	0.12	-168.00	
150.0	0.21	52.35	150.0	0.0	0.2	0.0	0.34	0.22	-104.54	
200.0	0.07	55.91	200.0	0.1	0.2	0.0	0.28	-0.28	7.12	
250.0	0.17	91.21	250.0	0.1	0.3	0.1	0.24	0.20	70.60	
300.0	0.08	84.16	300.0	0.1	0.5	0.0	0.18	-0.18	-14.10	
350.0	0.17	98.66	350.0	0.1	0.6	0.0	0.19	0.18	29.00	
400.0	0.18	91.05	400.0	0.1	0.7	0.0	0.05	0.02	-15.22	

DrillRight

Survey Report

Company: Sandridge Energy	Local Co-ordinate Reference: Well Cather Trust 3408 1-9H
Project: Harper County (NAD-27)	TVD Reference: KB @ 1338.0usft
Site: Sec 16-T34S-R08W	MD Reference: KB @ 1338.0usft
Well: Cather Trust 3408 1-9H	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
450.0	0.13	113.22	450.0	0.0	0.8	0.0	0.15	-0.10	44.34	
500.0	0.07	54.48	500.0	0.0	0.9	0.0	0.22	-0.12	-117.48	
550.0	0.15	77.79	550.0	0.1	1.0	0.0	0.18	0.16	46.62	
600.0	0.03	156.18	600.0	0.1	1.1	0.0	0.29	-0.24	156.78	
650.0	0.05	311.72	650.0	0.1	1.1	0.0	0.16	0.04	311.08	
700.0	0.14	203.69	700.0	0.0	1.0	-0.1	0.33	0.18	-216.06	
750.0	0.25	182.06	750.0	-0.1	1.0	-0.2	0.26	0.22	-43.26	
778.0	0.41	172.28	778.0	-0.3	1.0	-0.4	0.60	0.57	-34.93	
Last Gyro Survey										
825.0	0.30	238.90	825.0	-0.5	0.9	-0.6	0.85	-0.23	141.74	
First Drillright MWD Survey										
1,108.0	0.20	228.40	1,108.0	-1.2	-0.1	-1.2	0.04	-0.04	-3.71	
1,297.0	1.80	217.30	1,297.0	-3.8	-2.1	-3.6	0.85	0.85	-5.87	
1,392.0	1.60	288.90	1,391.9	-4.6	-4.3	-4.1	2.10	-0.21	75.37	
1,486.0	3.60	252.70	1,485.8	-5.0	-8.3	-4.2	2.65	2.13	-38.51	
1,580.0	7.50	248.10	1,579.4	-8.2	-16.8	-6.5	4.17	4.15	-4.89	
1,674.0	8.40	240.30	1,672.5	-13.9	-28.5	-11.1	1.49	0.96	-8.30	
1,769.0	10.80	239.10	1,766.1	-21.9	-42.2	-17.7	2.53	2.53	-1.26	
1,864.0	12.00	236.50	1,859.3	-31.9	-58.0	-26.1	1.37	1.26	-2.74	
1,959.0	12.80	236.40	1,952.0	-43.2	-75.0	-35.7	0.84	0.84	-0.11	
2,053.0	10.40	231.80	2,044.1	-54.2	-90.4	-45.2	2.73	-2.55	-4.89	
2,148.0	12.00	236.40	2,137.3	-65.0	-105.4	-54.4	1.93	1.68	4.84	
2,243.0	12.30	241.40	2,230.2	-75.3	-122.5	-63.1	1.15	0.32	5.26	
2,337.0	13.00	238.60	2,321.9	-85.6	-140.3	-71.6	0.99	0.74	-2.98	
2,432.0	11.50	236.10	2,414.7	-96.4	-157.3	-80.7	1.67	-1.58	-2.63	
2,527.0	11.30	240.30	2,507.9	-106.3	-173.2	-89.0	0.90	-0.21	4.42	
2,621.0	10.70	237.80	2,600.1	-115.5	-188.6	-96.7	0.82	-0.64	-2.66	
2,715.0	12.40	243.10	2,692.2	-124.7	-205.0	-104.3	2.13	1.81	5.64	
2,809.0	12.00	243.20	2,784.1	-133.7	-222.7	-111.5	0.43	-0.43	0.11	
2,904.0	11.90	242.90	2,877.0	-142.6	-240.2	-118.7	0.12	-0.11	-0.32	
2,999.0	10.20	243.80	2,970.3	-150.8	-256.5	-125.2	1.80	-1.79	0.95	
3,093.0	11.30	242.30	3,062.6	-158.8	-272.1	-131.7	1.21	1.17	-1.60	
3,188.0	11.80	238.50	3,155.7	-168.2	-288.6	-139.4	0.96	0.53	-4.00	
3,283.0	13.90	237.30	3,248.3	-179.4	-306.5	-148.9	2.23	2.21	-1.26	
3,377.0	12.30	235.10	3,339.9	-191.2	-324.3	-158.9	1.78	-1.70	-2.34	
3,472.0	12.00	233.00	3,432.8	-203.0	-340.4	-169.0	0.56	-0.32	-2.21	
3,567.0	13.20	246.60	3,525.5	-213.2	-358.3	-177.5	3.36	1.26	14.32	
3,661.0	10.40	245.60	3,617.5	-221.0	-375.9	-183.5	2.99	-2.98	-1.06	
3,724.0	9.50	250.60	3,679.5	-225.1	-385.9	-186.6	1.98	-1.43	7.94	
3,756.0	10.20	260.20	3,711.1	-226.4	-391.2	-187.5	5.57	2.19	30.00	
3,787.0	10.40	271.30	3,741.6	-226.8	-396.7	-187.3	6.42	0.65	35.81	
3,819.0	11.20	281.30	3,773.0	-226.2	-402.7	-186.1	6.36	2.50	31.25	
3,850.0	12.50	291.10	3,803.3	-224.4	-408.8	-183.7	7.71	4.19	31.61	

DrillRight

Survey Report

Company:	Sandridge Energy	Local Co-ordinate Reference:	Well Cather Trust 3408 1-9H
Project:	Harper County (NAD-27)	TVD Reference:	KB @ 1338.0usft
Site:	Sec 16-T34S-R08W	MD Reference:	KB @ 1338.0usft
Well:	Cather Trust 3408 1-9H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,882.0	14.10	298.90	3,834.5	-221.2	-415.4	-179.9	7.50	5.00	24.38	
3,913.0	14.90	306.70	3,864.5	-217.0	-421.9	-175.1	6.80	2.58	25.16	
3,945.0	14.20	314.80	3,895.5	-211.8	-428.0	-169.3	6.72	-2.19	25.31	
3,976.0	13.80	324.80	3,925.6	-206.1	-432.8	-163.2	7.90	-1.29	32.26	
4,008.0	13.50	333.10	3,956.7	-199.6	-436.7	-156.4	6.19	-0.94	25.94	
4,039.0	13.20	336.00	3,986.8	-193.2	-439.8	-149.7	2.37	-0.97	9.35	
4,071.0	14.30	334.70	4,017.9	-186.3	-443.0	-142.5	3.57	3.44	-4.06	
4,102.0	16.20	336.40	4,047.8	-178.9	-446.3	-134.8	6.30	6.13	5.48	
4,133.0	18.70	338.50	4,077.4	-170.3	-449.9	-125.9	8.32	8.06	6.77	
4,165.0	22.10	340.50	4,107.4	-159.8	-453.8	-115.1	10.84	10.63	6.25	
4,196.0	25.30	342.30	4,135.8	-148.0	-457.7	-103.0	10.58	10.32	5.81	
4,228.0	27.80	343.70	4,164.4	-134.3	-461.9	-88.9	8.05	7.81	4.38	
4,259.0	29.90	344.90	4,191.5	-119.9	-465.9	-74.2	7.03	6.77	3.87	
4,291.0	30.90	347.40	4,219.1	-104.2	-469.8	-58.2	5.04	3.13	7.81	
4,322.0	33.20	349.70	4,245.4	-88.1	-473.1	-41.8	8.40	7.42	7.42	
4,354.0	35.70	351.10	4,271.8	-70.2	-476.1	-23.8	8.19	7.81	4.38	
4,385.0	37.70	352.50	4,296.7	-51.9	-478.7	-5.3	6.99	6.45	4.52	
4,417.0	39.80	353.80	4,321.6	-32.0	-481.1	14.8	7.04	6.56	4.06	
4,448.0	42.40	354.60	4,345.0	-11.7	-483.2	35.1	8.56	8.39	2.58	
4,480.0	45.60	355.20	4,368.0	10.4	-485.1	57.4	10.08	10.00	1.88	
4,512.0	49.00	355.50	4,389.7	33.8	-487.0	80.9	10.65	10.63	0.94	
4,543.0	51.50	355.90	4,409.5	57.6	-488.8	104.7	8.13	8.06	1.29	
4,574.0	52.20	356.60	4,428.7	81.9	-490.4	129.1	2.87	2.26	2.26	
4,606.0	53.60	357.40	4,448.0	107.4	-491.7	154.6	4.81	4.38	2.50	
4,638.0	55.90	358.10	4,466.4	133.5	-492.8	180.6	7.41	7.19	2.19	
4,701.0	60.50	358.50	4,499.6	187.0	-494.4	234.0	7.32	7.30	0.63	
4,796.0	58.70	358.30	4,547.7	268.9	-496.6	315.8	1.90	-1.89	-0.21	
4,859.0	57.70	357.40	4,580.9	322.4	-498.6	369.2	2.00	-1.59	-1.43	
4,890.0	57.80	357.70	4,597.4	348.6	-499.8	395.4	0.88	0.32	0.97	
4,922.0	60.60	358.30	4,613.8	376.1	-500.7	422.8	8.90	8.75	1.88	
4,953.0	64.30	358.40	4,628.1	403.6	-501.5	450.3	11.94	11.94	0.32	
4,985.0	68.20	358.60	4,641.0	432.8	-502.3	479.5	12.20	12.19	0.63	
5,016.0	72.10	358.90	4,651.6	462.0	-502.9	508.5	12.61	12.58	0.97	
5,047.0	76.20	358.80	4,660.0	491.8	-503.5	538.3	13.23	13.23	-0.32	
5,079.0	79.40	0.00	4,666.8	523.1	-503.8	569.4	10.65	10.00	3.75	
5,110.0	83.00	0.00	4,671.5	553.7	-503.8	599.9	11.61	11.61	0.00	
5,142.0	86.90	359.00	4,674.3	585.6	-504.1	631.7	12.58	12.19	-3.13	
5,173.0	89.50	359.90	4,675.3	616.5	-504.4	662.5	8.87	8.39	2.90	
5,202.0	89.70	359.90	4,675.5	645.5	-504.5	691.4	0.69	0.69	0.00	
5,296.0	90.50	359.90	4,675.3	739.5	-504.6	785.0	0.85	0.85	0.00	
5,391.0	91.10	0.60	4,674.0	834.5	-504.2	879.5	0.97	0.63	0.74	
5,485.0	92.20	359.90	4,671.3	928.5	-503.8	972.9	1.39	1.17	-0.74	
5,580.0	91.40	1.60	4,668.3	1,023.4	-502.6	1,067.3	1.98	-0.84	1.79	
5,674.0	91.10	3.20	4,666.3	1,117.3	-498.6	1,160.4	1.73	-0.32	1.70	

DrillRight

Survey Report

Company:	Sandridge Energy	Local Co-ordinate Reference:	Well Cather Trust 3408 1-9H
Project:	Harper County (NAD-27)	TVD Reference:	KB @ 1338.0usft
Site:	Sec 16-T34S-R08W	MD Reference:	KB @ 1338.0usft
Well:	Cather Trust 3408 1-9H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,769.0	90.80	3.30	4,664.7	1,212.2	-493.2	1,254.2	0.33	-0.32	0.11	
5,863.0	90.20	3.90	4,663.9	1,306.0	-487.3	1,347.0	0.90	-0.64	0.64	
5,958.0	88.90	2.80	4,664.6	1,400.8	-481.8	1,440.9	1.79	-1.37	-1.16	
6,050.0	89.40	2.60	4,666.0	1,492.7	-477.5	1,531.9	0.59	0.54	-0.22	
6,140.0	89.70	2.30	4,666.7	1,582.6	-473.6	1,621.0	0.47	0.33	-0.33	
6,232.0	90.40	0.90	4,666.6	1,674.6	-471.0	1,712.3	1.70	0.76	-1.52	
6,323.0	91.70	1.60	4,665.0	1,765.5	-469.1	1,802.7	1.62	1.43	0.77	
6,413.0	91.50	0.70	4,662.4	1,855.5	-467.2	1,892.0	1.02	-0.22	-1.00	
6,504.0	90.50	0.70	4,660.9	1,946.4	-466.1	1,982.5	1.10	-1.10	0.00	
6,596.0	89.50	0.60	4,660.9	2,038.4	-465.1	2,073.9	1.09	-1.09	-0.11	
6,687.0	90.80	1.20	4,660.6	2,129.4	-463.7	2,164.3	1.57	1.43	0.66	
6,779.0	91.10	1.10	4,659.1	2,221.4	-461.8	2,255.7	0.34	0.33	-0.11	
6,869.0	89.80	359.60	4,658.4	2,311.4	-461.3	2,345.2	2.21	-1.44	-1.67	
6,960.0	89.50	358.80	4,658.9	2,402.4	-462.5	2,435.9	0.94	-0.33	-0.88	
7,050.0	88.30	359.10	4,660.7	2,492.3	-464.2	2,525.6	1.37	-1.33	0.33	
7,140.0	89.30	358.70	4,662.6	2,582.3	-465.9	2,615.3	1.20	1.11	-0.44	
7,230.0	92.30	357.80	4,661.3	2,672.2	-468.7	2,705.1	3.48	3.33	-1.00	
7,322.0	90.10	358.50	4,659.4	2,764.2	-471.6	2,796.9	2.51	-2.39	0.76	
7,416.0	89.60	357.60	4,659.6	2,858.1	-474.8	2,890.7	1.10	-0.53	-0.96	
7,510.0	89.80	358.30	4,660.1	2,952.0	-478.2	2,984.5	0.77	0.21	0.74	
7,603.0	89.00	359.70	4,661.1	3,045.0	-479.8	3,077.2	1.73	-0.86	1.51	
7,697.0	89.10	359.70	4,662.6	3,139.0	-480.3	3,170.8	0.11	0.11	0.00	
7,792.0	90.40	358.80	4,663.1	3,234.0	-481.6	3,265.4	1.66	1.37	-0.95	
7,886.0	89.20	359.70	4,663.4	3,328.0	-482.8	3,359.1	1.60	-1.28	0.96	
7,981.0	90.50	359.50	4,663.6	3,423.0	-483.4	3,453.7	1.38	1.37	-0.21	
8,076.0	92.10	0.30	4,661.5	3,518.0	-483.6	3,548.3	1.88	1.68	0.84	
8,171.0	92.80	359.10	4,657.4	3,612.9	-484.1	3,642.8	1.46	0.74	-1.26	
8,265.0	92.00	359.20	4,653.5	3,706.8	-485.5	3,736.4	0.86	-0.85	0.11	
8,360.0	94.10	359.10	4,648.4	3,801.6	-486.9	3,830.9	2.21	2.21	-0.11	
8,454.0	88.80	359.30	4,646.0	3,895.5	-488.2	3,924.5	5.64	-5.64	0.21	
8,549.0	85.30	358.50	4,650.9	3,990.4	-490.0	4,019.1	3.78	-3.68	-0.84	
8,643.0	86.60	359.50	4,657.6	4,084.1	-491.7	4,112.6	1.74	1.38	1.06	
8,738.0	88.20	0.40	4,661.9	4,179.0	-491.8	4,207.0	1.93	1.68	0.95	
8,832.0	89.40	0.40	4,663.9	4,273.0	-491.1	4,300.5	1.28	1.28	0.00	
8,926.0	91.20	2.60	4,663.4	4,367.0	-488.6	4,393.8	3.02	1.91	2.34	
9,021.0	91.00	3.20	4,661.5	4,461.8	-483.8	4,487.7	0.67	-0.21	0.63	
9,116.0	90.50	1.40	4,660.3	4,556.7	-480.0	4,581.8	1.97	-0.53	-1.89	
9,210.0	89.60	1.50	4,660.2	4,650.7	-477.6	4,675.1	0.96	-0.96	0.11	
9,304.0	91.10	1.90	4,659.6	4,744.7	-474.9	4,768.3	1.65	1.60	0.43	
9,399.0	89.50	0.10	4,659.1	4,839.6	-473.2	4,862.7	2.54	-1.68	-1.89	
9,493.0	90.40	359.90	4,659.2	4,933.6	-473.2	4,956.3	0.98	0.96	-0.21	
9,599.0	92.40	1.80	4,656.6	5,039.6	-471.6	5,061.6	2.60	1.89	1.79	

Last Drillright MWD Survey

DrillRight

Survey Report

Company: Sandridge Energy	Local Co-ordinate Reference: Well Cather Trust 3408 1-9H
Project: Harper County (NAD-27)	TVD Reference: KB @ 1338.0usft
Site: Sec 16-T34S-R08W	MD Reference: KB @ 1338.0usft
Well: Cather Trust 3408 1-9H	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,649.0	92.40	1.80	4,654.5	5,089.5	-470.1	5,111.1	0.00	0.00	0.00
Projection to TD - PBHL Cather Trust 1-9H									

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
50.0	50.0	0.0	0.0	First Gyro Survey
778.0	778.0	-0.3	1.0	Last Gyro Survey
825.0	825.0	-0.5	0.9	First Drillright MWD Survey
9,599.0	4,656.6	5,039.6	-471.6	Last Drillright MWD Survey
9,649.0	4,654.5	5,089.5	-470.1	Projection to TD

Checked By: _____ Approved By: _____ Date: _____